PHYS 2698: Senior Thesis I

Course Information

Instructor and Email: **Dr. Audrey Sederberg (asederberg6@gatech.edu)**
Term: Summer 2026

Course Description

This course provides academic credit for selected senior undergraduates to conduct original research under the supervision of a Georgia Tech faculty advisor. The course does not involve regular class meetings, assignments, or examinations. The scope and direction of research are determined by the student in consultation with the thesis advisor, consistent with the requirements of the degree program.

Course Learning Outcomes

By enrolling in this course, students will:

1. Engage in independent research under faculty supervision and identify when guidance is needed

2. Demonstrate ability in formulating research questions, stating hypotheses, and applying appropriate experimental methods to generate data to test the hypothesis.

3. Effectively communicate research activity in written, graphical, and oral format and recognize importance of accurate reporting of methods and data for replication studies

Required Course Materials

No textbooks or materials are required. Resources for research are determined in consultation with the thesis advisor. Minimum requirements include a personal computer that can connect to the internet and includes software for word processing, reference management, and data analysis.

Grading Policy

Grades for this course will be determined based on student effort and communication throughout the semester. Students will not be penalized for not achieving goals due to

circumstances beyond their control (e.g., experiment optimization, protocol approval delays, etc.). It is expected that each student will produce a written thesis proposal, which will form the basis of the letter grade.

Attendance Policy

This course does not include scheduled class meetings. Students conduct independent research under the supervision of a thesis advisor and/or a daily mentor. The frequency and format of student– advisor contact are determined by mutual agreement.

Undergraduate research students will participate in research activities on a weekly basis commensurate with registered credit hours and as discussed with faculty research mentors. Students earning research credit are expected to commit approximately 3hr of lab-related work per credit hour earned. This includes all in-person or remote lab work, meetings, readings, writing, and any other work that is directly related to the student's role in the lab.

Academic and Research Honesty/Integrity Statement

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review the Student Code of Conduct and the Academic Honor Code.

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic honor code: https://policylibrary.gatech.edu/student-life/academic-honor-code

Students are expected to perform research in an ethical and responsible manner. Allegations of scientific or scholarly misconduct are handled in accordance with the procedures outlined by the Policy for Responding to Allegations of Scientific or Other Scholarly Misconduct.

Core IMPACTS

Not applicable.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services as soon as possible to make an appointment to discuss your

special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations

It is expected that research mentors and students will discuss and agree on expectations before beginning an undergraduate research course. Expectations will include the student's weekly time commitment; methods and frequency of communication between the student and mentor(s); and how research will be recorded, stored, and shared.

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class. To support mutual respect and understanding between students and faculty, Georgia Tech faculty and students collectively adopted a list of student-faculty expectations. See the full Student-Faculty Expectations agreement here: https://catalog.gatech.edu/rules/22/

Campus Resources

The Undergraduate Research Opportunities Program (UROP) provides resources and support for undergraduate research students and their mentors. Visit https://undergradresearch.gatech.edu/ or contact UROP at urop@gatech.edu for more information.